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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kia Silverbrook

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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT

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2622

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/729,151	<b>Applicant(s)</b> SILVERBROOK, KIA	
	<b>Examiner</b> LUONG T. NGUYEN	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1, 2, 5-9 filed on 8/28/2008 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. Claims 1-2, 5-9 are objected to because of the following informalities:

Claim 1 (line 19), "the a plurality of analog signal processors" should be changed to --the plurality of analog signal processors--.

Claims 2, 5-9 are objected as being dependent on claim 1.

Appropriate correction is required.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

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with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-2, 5-6, 8-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5 of U.S. Patent No. 6,614,560 in view of Schmidt (US 6,278,481) and Roberts (US 5,541,654) further in view of Gee et al. (US 6,320,617) and Murakami (US 5,163,762).

Regarding application claim 1, Patent claims 1 and 5 discloses:

an image sensor (an image sensor, Patent claim 1, lines 2-3);

image processing circuitry (processing device, patent claim 1, lines 2-3);

a print head interface that is connected to the image processing circuitry to receive data from the image processing circuitry and to format that data for a printhead (a print head, Patent claim 1, lines 5-6);

a CMOS active pixel sensor array ( a CMOS pixel image sensor, patent claim 1, line 13);

wherein the high current drive transistor is driven when the image sensor is not in use so as to avoid effecting the captured image via a voltage fluctuation in the image capture and processing integrated circuit (Patent claim 5, which depends from independence Patent claim 1, discloses that the motor drive transistors are only operated whilst the image sensor in non-operational, this indicates that the transistor is driven when the image sensor is not in use).

Patent claims 1 and 5 fails to disclose the image sensor including a plurality of sensor columns for capturing an image. However, Schmidt discloses a CCD device 405, in which the signals are outputted from CCD 405 on a column by column basis (column 9, lines 42-47).

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Therefore, it would have been obvious to the one of ordinary skill in the art at the time to modify the image sensor and processing device in Patent claims 1 and 5 by the teaching of Schmidt reference in order to provide camera with a two-dimensional array of pixels which provides the benefit of increasing a signal-to-noise ratio.

Patent claims 1 and 5, Schmidt reference fail to disclose a plurality of analogue-to-digital converters that are connected to the image sensor to convert analogue signals generated by the image sensor into digital signals.

However, the Roberts reference teaches in Figures 1 and 6, an image capture and processing integrated circuit (10) comprising: a plurality of analogue-to-digital converters (ADC's) (Four ADCs 166) that are connect to a image sensor to convert analogue signals generated by the image sensor into digital signals (See Col. 9, lines 47-67). The Roberts reference is evidence that one of ordinary skill in the art at the time to see more advantages for the image capture and processing integrated circuit having more flexible design options and including a plurality of analogue-to-digital converters (ADC's) that are connected to a image sensor so that the desired speed of accessing image information from the pixels of the image sensor can be obtained easily. For that reason, it would have been obvious to the one of ordinary skill in the art at the time to modify the image sensor and processing device in Patent claims 1 and 5, and Schmidt by providing a plurality of ADC in the image imaging device as taught by Roberts ('654).

Patent claims 1 and 5, Schmidt and Roberts references fail to specifically disclose a plurality of analog signal processors, each analog signal processor is dedicated to process one or

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more signals generated by a respective one of the plurality of sensor columns, wherein the plurality of analog signal processors are configured to carry out enhancement processes on analog signals generated by the active pixel sensor array. However, Gee et al. reference teaches an active pixel sensor 5, which includes column processing section 5 has individual control circuits 24 for each of the columns within sensor 5 (Figure 1, Col. 3, lines 5-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Patent claims 1 and 5, Schmidt and Robert reference by the teaching of Gee et al. reference in order to perform the fixed pattern noise reduction operation (Col. 3, lines 45-50).

Patent claims 1 and 5, Schmidt, Roberts and Gee et al. references fail to specifically disclose a high current transistor configured to drive a capping solenoid of the printhead. However, Murakami teaches a printing head, in which solenoids are driven by transistors, figures 1-4, column 1, line 59 – column 2, line 3; column 3, line 42-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Patent claims 1 and 5, Robert and Gee et al. reference by the teaching of Murakami in order to provide a solenoid head driving circuit capable of preventing current flowing through the solenoid from undesirably increasing 9, column 1, lines 4-10).

Regarding application claim 2, the Schmidt reference discloses which includes a memory device (325 in Figure 3) that is interposed between the image sensor integrated circuit and the image processing circuitry to store data relating to an image sensed by the image sensor integrated circuit (See Col. 5, lines 44-47 and Col. 10, lines 50-67).

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Regarding application claim 5, the Schmidt reference discloses which the image processing circuitry includes color interpolation circuitry to interpolate (any techniques are well known in the computer graphics art, such as perform different color translations or interpolation of the pixel data) pixel data (See Col. 6, lines 36-43 and Col. 9, lines 55-65).

Regarding application claim 6, the Schmidt reference discloses in which the image processing circuitry includes convolver circuitry that is configured to apply a convolution process (image sharpening process) to the image data (See Col. 5, lines 61-65).

Regarding application claim 8, the Schmidt reference discloses which is a single integrated circuit as shown in Figure 6 (e.g., CMOS integrated circuit, see Col. 5, lines 15-21; Col. 10, lines 50-67).

Regarding application claim 9, Patent claims 1 and 5 discloses a camera system which includes the image capture and processing device (camera system, Patent claim 1, line 1).

5. Claim 7 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5 of U.S. Patent No. 6,614,560 in view of Schmidt (US 6,278,481) and Roberts (US 5,541,654) and Gee et al. (US 6,320,617) and Murakami (US 5,163,762) further in view of Bagchi et al. (U.S. Patent 5,916,358).

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Regarding application claim 7, the Patent claims 1 and 5, Schmidt, Roberts, Gee et al. and Murakami references disclose all subject matter as discussed in respected to application claim 1, except that the Schmidt reference does not explicitly discloses the print head interface (output circuit 330) is configured to format the data correctly for a pagewidth printhead.

The Bagchi reference discloses in Figures 6 and 24, a image source (52) or CCD camera (633) connected to a Data phasing system (55 as print head interface, see Col. 31, lines 34-37) which configured to format the data correctly for a page width printhead (50) (See Col. 31, lines 1-22, Col. 7, 45-50, Col. 23, lines 30-38 and Col. 44, lines 47-52). The Bagchi reference is evidence that one of ordinary skill in the art at the time to see more advantages for the image capture and processing integrated circuit having the print head interface configured to format the data correctly for a pagewidth printhead so that significantly increase the speed of printing paper. For that reason, it would have been obvious to the one of ordinary skill in the art at the time to modify the image capture and processing integrated circuit of Schmidt ('481) for providing the print head interface (output circuit 330) is configured to format the data correctly for a pagewidth printhead as taught by Bagchi ('358).

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David L. Ometz/  
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2622

/L. T. N/  
12/09/08